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Abstract:

Storage stability of marine phospholipids emulsions.

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Marine phospholipids (MPL) are believed to provide more advantages than fish oil from the same source. They are considered to have a better bioavailability, a better resistance towards oxidation and a higher content of polyunsaturated fatty acids such as eicosapentaenoic (EPA) and docosahexaenoic acids (DHA) than oily triglycerides (fish oil). Therefore, the objective of this study is to explore the feasibility of using marine phospholipids emulsions as delivery system through investigation of the physical, oxidative and hydrolytic stability of MPL emulsions with or without addition of fish oil. The effect of initial Peroxide Value, total lipids, phospholipids and antioxidants content on stability of MPL emulsions were studied. The physical stability was investigated through measurement of particle size distribution and creaming stability, which involve measurement of changes (%) in emulsion volume. In addition, preliminary investigation of the oxidative and hydrolytic stability was carried out through determination of Peroxide Value and Free Fatty Acids Value after 32 days storage at room temperature and 2°C, respectively. Oxidative stability of MPL emulsions were also investigated through measurement of secondary volatile compounds by Solid Phase Microextraction at several time intervals at 2°C storage. Preliminary results showed that marine phospholipids emulsion has a good oxidative stability.